

## 6227.0 - Education and Work, Australia, May 2016

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## Summary

### Summary of Findings

#### SUMMARY OF FINDINGS

##### PARTICIPATION

In May 2016 it was estimated that, of the 15.7 million people aged 15 to 64 years in Australia, over 3 million, or nearly 1 in 5 people (20%), were enrolled in formal study. Of these, 1.2 million people were aged 15 to 19 years, and 741,100 people were aged 20 to 24 years. (Table 1)

The proportion of people studying has increased across most demographics over the last ten years. Among young women aged 15 to 24 years, the proportion studying increased from 56% in 2006 to 64% in 2016, while for young men the proportion increased from 55% to 61%. Within the older age cohort of 25 to 64 year olds, the proportion of women studying increased from 7.9% to 10.5% in the last decade, whilst for men, the increase was from 5.7% to 7.2% over the same period. (Table 22)

In May 2016, the majority of 15 to 19 year olds (83%) were engaged in study. This proportion then declined with age: 45% of persons aged 20 to 24 years were engaged in study, declining to 16% of persons aged 25 to 34 years, 9.2% aged 35 to 44 years, 5.7% aged 45 to 54 years and 2.7% of those aged 55 to 64 years.

Females were more likely than males to be engaged in study, with 21% of females currently studying towards a qualification compared with 18% of males.

Fifteen percent of employed people aged 15 to 64 years were studying for a qualification in May 2016. (Table 1)

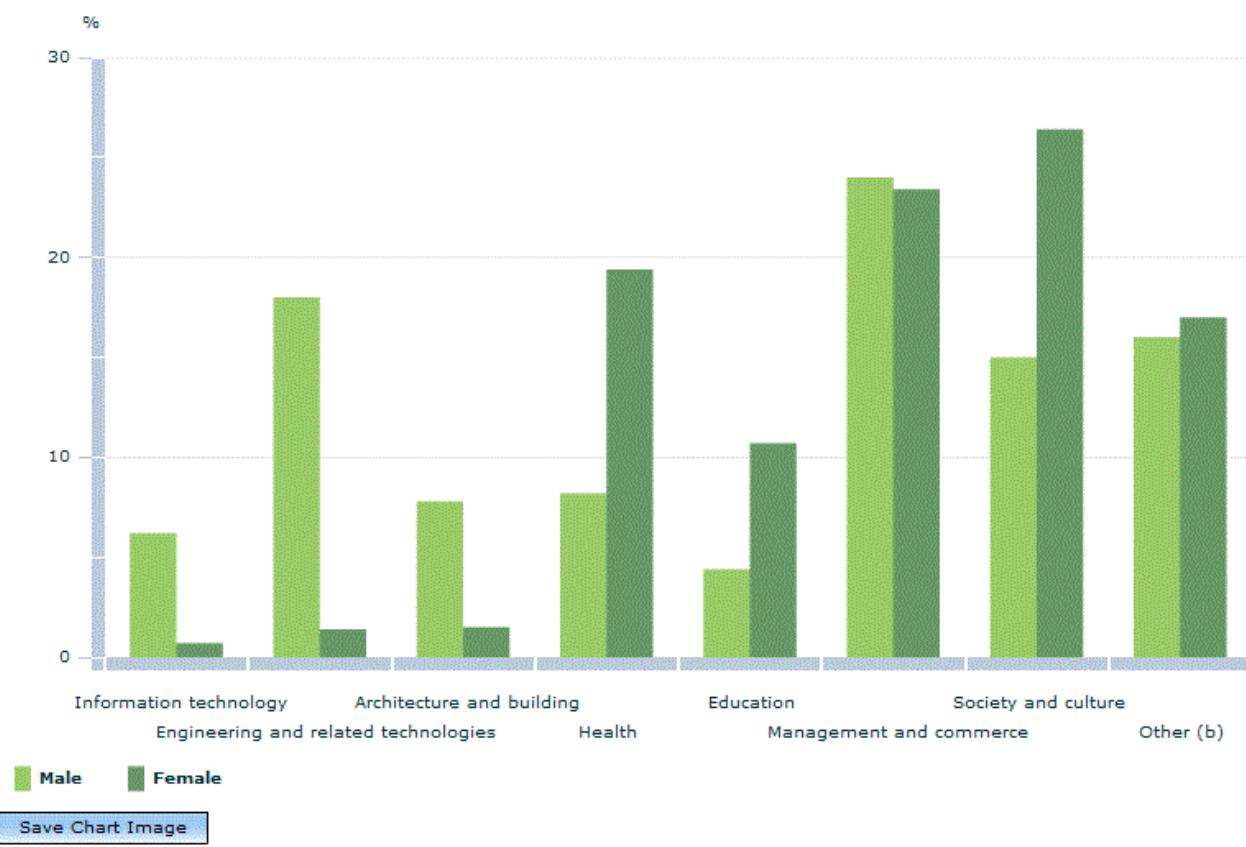
Nearly three-quarters of 15 to 64 year olds (73% or 2.2 million people) enrolled in formal study were studying non-school qualifications, and over one-quarter (27%) were enrolled in school level study. Most of these people were enrolled full-time (67%), with the remaining third enrolled part-time (33%). Two in five people (42%) studying a non-school qualification were enrolled in a Bachelor degree, and almost one in five people were enrolled in a Certificate III or IV (19%). (Table 2)

Of those engaged in study, approximately 1.3 million (43%) were attending a higher education institution, 869,000 (28%) were at school, 498,800 (16%) were at Technical and Further Education (TAFE) institutions and 389,000 (13%) were at other educational institutions or organisations. (Table 2)

Similar proportions of males and females studying for a non-school qualification were undertaking Bachelor degrees (42% and 41%, respectively), while males were more likely than females to be enrolled in Certificates III and IV (22% compared with 16%). Females were more likely than males to be studying a Graduate Diploma or Graduate Certificate (4.5% compared to 2.8%) and an Advanced Diploma or Diploma (17% compared to 12%). (Table 5)

As in previous years, the most commonly reported main field of study for people aged 15 to 64 years enrolled in a non-school qualification was Management and commerce (24% of those enrolled) followed by Society and culture (21%). While there were no differences in the reported main field of study since 2015, there are differences over the longer term. The proportion of people studying Engineering and related technologies decreased from 12% of those enrolled in 2008 to 8.8% in 2016, while the proportion of people studying Health increased from 11% to 14% over the same period. A larger proportion of females than males who were studying, in 2016, did so in the fields of Health (19% and 8.2% respectively) and Society and culture (26% and 15% respectively), while almost one-fifth (18%) of males were studying Engineering and related technologies, compared with 1.4% of females. (Table 6 and Graph 1)

**Graph 1: Currently studying a non-school qualification, by main field of study and sex<sup>(a)</sup>**



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**Footnote(s):** (a) Persons currently studying a non-school qualification, aged 15 to 64 years; (b) Includes Natural and physical sciences; Agriculture, environmental and related studies; Creative arts and Food and hospitality services; Mixed field programmes and Field not determined.

**Source(s):** Education and Work, Australia, May 2016

Of people aged 15 to 19 years who were enrolled in school level study in May 2016, almost one in five (19% or 156,300 people) were undertaking vocational education and training (VET) subjects or courses as part of their school studies. (Table 7)

## LEVEL OF HIGHEST NON-SCHOOL QUALIFICATION

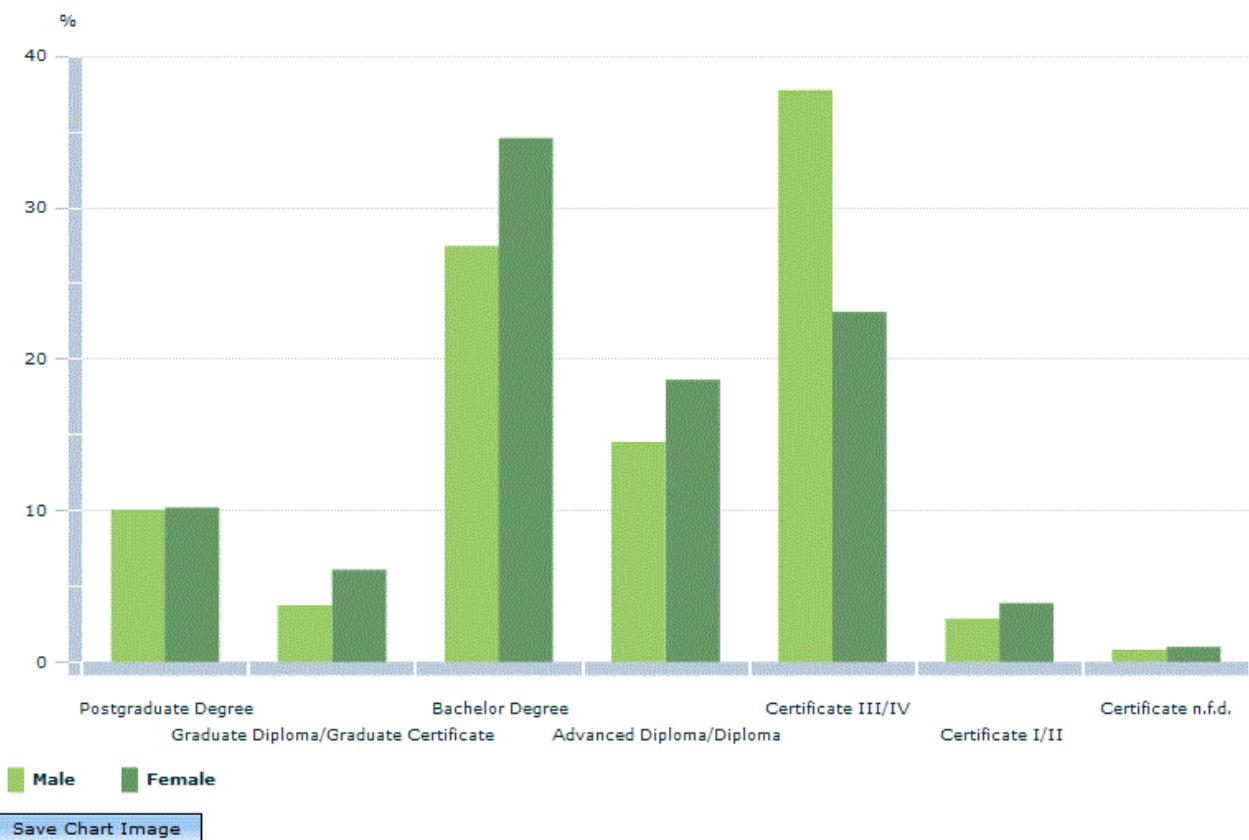
In May 2016, 59% of people aged 15 to 74 years had completed a non-school qualification. The proportion of males (60%) with a non-school qualification was higher than the proportion of females (58%).

Persons aged over 45 years were less likely to have a non-school qualification than those aged 25 to 44 years. The proportion with a non-school qualification in the 25 to 34 year age group and the 35 to 44 year age group was similar, at 73% and 72% respectively, compared with 66% for 45 to 54 year olds, 58% for 55 to 64 year olds and 47% for 65 to 74 year olds.

Two-thirds (67%) of employed people aged 15 to 74 years had completed a non-school qualification, compared with half (51%) of unemployed people, and 41% of people who were not in the labour force. (Table 13)

Of employed persons aged 15 to 74 years with a non-school qualification, males were more likely to have a Certificate III or IV qualification (38%) than any other qualification, while females were more likely to have a Bachelor degree (35%). Of those with a Certificate III or IV qualification, one-third (34%) worked as Technicians and trades workers, while half (52%) of those with a Bachelor degree were employed as Professionals. Of all employed persons with a non-school qualification, the industry they were most commonly employed in was Health care and social assistance (16%), while employed persons without a non-school qualification were most commonly employed in the Retail trade industry sector (17%). (Table 14 and Graph 2)

**Graph 2: Employed persons with a non-school qualification, by level and sex<sup>(a)</sup>**



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**Footnote(s):** (a) Employed persons with a non-school qualification, aged 15 to 74 years

**Source(s):** Education and Work, Australia, May 2016

Of the 10.5 million people aged 15 to 74 years with a non-school qualification, 44% (4.6 million people) had a Bachelor degree or higher qualification. The majority of people completed their qualifications in Australia (84%). (Table 16) The proportion of people aged 15 to 74 years who held a qualification above a Bachelor degree level has more than tripled in the last 30 years (7.2% in 1986, compared to 26% in 2016). (Table 29)

The most common main field of study for highest non-school qualifications was Management and commerce (23%), followed by Engineering and related technologies (17%), Society and culture (15%) and Health (11%). Males were more likely to have their highest non-school qualification in the field of Engineering and related technologies (31%) than any other field, followed by Management and commerce (19%). Females were more likely to have their highest non-school qualification in the field of Management and commerce (27%), followed by Society and culture (20%). (Table 15)

The proportion of males and females with a non-school qualification has converged in the last decade. In 2006, 60% of males aged 20 to 64 years had a non-school qualification compared to 55% of females in the same age group. In 2016, the proportion for males and females is the same (66% for both) among this age group. (Table 25) In addition, the proportion of people aged 20-64 years with a Certificate III or higher qualification rose from 49% in 2006 to 61% in 2016. (Table 26)

### Level of Highest Educational Attainment

In May 2016, a quarter (25%) of people aged 15 to 74 years reported their highest educational attainment as Year 11 or below and 18% reported Year 12 or equivalent. A further 18% had a highest level of attainment of a Certificate III or IV, 17% had a Bachelor degree, 2.8% had a Graduate diploma or Graduate certificate and 5.5% had a Postgraduate degree. Two-fifths (41%) of people in the ACT had a Bachelor degree or above as their highest level of educational attainment, the highest proportion of all states and territories.

The proportion of people aged 20 to 64 years with Year 12 or equivalent has increased from 53% in 2006 to 66% in 2016. (Table 30)

## TRANSITION FROM EDUCATION TO WORK

## **Completing a non-school qualification**

In May 2016, there were 1.2 million people aged 15 to 74 years who had completed the non-school qualification in which they were enrolled in 2015. Almost four out of five (79%) of these were employed in May 2016, one in seven (14%) were not in the labour force, while one in fourteen (7.1%) were unemployed. (Table 19)

## **School Leavers**

There were 297,500 people aged 15 to 24 years who were enrolled in secondary school in 2015, but not in May 2016. Of these school leavers, 80% had completed Year 12 or equivalent and 59% (175,600 people) were currently enrolled in study at a non-school institution. The number of school leavers who were not studying was 122,800 (41%) and of these, the majority were employed, either full-time (35,400 or 29%) or part-time (46,900 or 38%). (Table 18)

Of all people aged 15 to 24 years who were not enrolled in school level study in May 2016, over one-third were employed full-time (35%) and over one-third were in full-time study (35%). Twelve percent (274,600 people) were not engaged in employment or study. (Table 11)

The proportion of young people aged 17 to 24 years in full time employment decreased from 47% in 2006 to 35% in 2016, while during the same period the proportion of those in full-time study rose from 28% to 35%. (Table 34)

## **APPRENTICES AND TRAINEES**

In May 2016, there were 188,600 people aged 15 to 64 years who were employed as apprentices or trainees and part of the Australian Apprenticeship Scheme. Of these, 97,100 people (52%) had commenced their apprenticeship or traineeship in the last 12 months. The majority of apprentices or trainees were male (76%). As in previous years, construction was the most common industry for apprentices and trainees, with 41% (76,800 people) employed in this industry. (Table 20)

There were 14,100 people who gained a place for an apprenticeship/traineeship but were not undertaking it in May 2016, while 28,600 people who applied for an apprenticeship/traineeship were unsuccessful in gaining a place in 2016. (Table 21)

## **LABOUR FORCE STATUS**

People with higher levels of educational attainment were more likely to be employed, with 80% of persons with a Bachelor degree or above, 75% of persons with an Advanced diploma or Diploma, and 76% of persons with a Certificate III or IV being employed at May 2016. This compares with 67% of persons with Year 12 as their highest attainment and 44% with Year 11 or below as their highest attainment. (Table 12)

Females with dependent children were less likely to be in full-time employment (28%) than males with dependent children (82%). Females were more likely than males to be in part-time employment (37% compared with 8.6%) or not in the labour force (31% compared with 6.8%). A similar trend was evident when males and females across all levels of highest educational attainment were compared. Females with a youngest child aged less than five years were more likely to not be in the labour force (41%) than females whose youngest child was aged 5 to 9 years (24%) or females whose youngest child was aged 10 to 14 years (18%).

Females with dependent children who had a Bachelor degree or above were more likely to be employed than those with other levels of educational attainment. Just over three quarters (77%) with a Bachelor degree or above were employed compared with 40% who had Year 11 or below. (Table 12)

## **About this Release**

Provides selected information on participation in education, highest educational attainment, transition from education to work and current labour force and demographic characteristics for the civilian population aged 15-74 years. Characteristics reported on include: type of educational institution attended or attending; level and main field of education of current study and highest level and main field of educational attainment.

Information on unsuccessful enrolment, and deferment of study, is included for persons not studying in the survey

year. Data on apprenticeships are also provided.

Some of the statistical tables are presented in time series format. This product includes Data Cubes in spreadsheet format only.

# Explanatory Notes

## Explanatory Notes

### EXPLANATORY NOTES

#### INTRODUCTION

**1** This publication contains results from the 2016 Survey of Education and Work (SEW) conducted throughout Australia in May 2016 as a supplement to the monthly Labour Force Survey (LFS). Respondents to the LFS who were in scope of the supplementary survey were asked further questions about education.

**2** The SEW provides annual information on a range of key indicators of educational participation and attainment of persons aged 15-74 years, along with data on people's transition between education and work. The annual time series allows for ongoing monitoring of the level of education of Australia's population including participation in current and previous study; type of educational institution attended; highest year of school completed; level and field of highest non-school qualification; characteristics of people's transition between education and work; and selected characteristics of apprentices and trainees.

**3** The publication Labour Force, Australia (cat. no. 6202.0) contains information about survey design, sample redesign, scope, coverage and population benchmarks relevant to the monthly LFS, which also apply to supplementary surveys. It also contains definitions of demographic and labour force characteristics.

#### CONCEPTS, SOURCES AND METHODS

**4** The conceptual framework used in Australia's LFS aligns closely with the standards and guidelines set out in Resolutions of the International Conference of Labour Statisticians. Descriptions of the underlying concepts and structure of Australia's labour force statistics, and the sources and methods used in compiling these estimates, are presented in Labour Statistics: Concepts, Sources and Methods, 2013 (cat. no. 6102.0.55.001).

**5** In July 2014, the LFS survey questionnaire underwent a number of developments. For further information see Information Paper: Questionnaire Used in the Labour Force Survey, July 2014.

#### SCOPE AND COVERAGE

##### Scope

**6** The scope of the SEW is restricted to persons aged 15-74 years who were usual residents of private dwellings and non-institutionalised special dwellings excluding:

- members of the permanent defence forces;
- certain diplomatic personnel of overseas governments, customarily excluded from the Census of Population and Housing and estimated resident populations;
- overseas residents in Australia;
- members of non-Australian defence forces (and their dependants);
- institutionalised persons (e.g. patients in hospitals, residents of retirement homes, residents of homes for persons with disabilities, inmates of prisons);
- Indigenous communities and
- boarding school pupils.

**7** Boarding school pupils have been excluded from the scope of the SEW since 2005, but were included in earlier collections.

**8** SEW excludes people living in Indigenous Communities. Since 2009, SEW has included people living in 'very remote' areas who are not in Indigenous Communities. Prior to SEW 2009, all persons living in 'very remote' parts of Australia were excluded. Nationally, less than 1% of persons in scope of SEW live in 'very remote' areas that are

not Indigenous Communities. In the Northern Territory, this proportion is higher, at around 8%.

**9** In 2013, the scope of SEW was extended to include all persons aged 65-74 years for the first time. From 2009 to 2012, persons aged 65-74 years who were in the labour force, or were marginally attached to the labour force were included. Persons were determined to be marginally attached to the labour force if they were not in the labour force in the reference week, wanted to work and:

- were actively looking for work but did not meet the availability criteria to be classified as unemployed; or
- were not actively looking for work but were available to start work within four weeks or could start work within four weeks.

Prior to 2009 all persons aged 65-74 were excluded from the scope of SEW.

**10** Persons who are permanently unable to work were included in the scope of SEW for the first time in 2013. There were an estimated 454,500 people who reported being permanently unable to work in May 2016.

## **Coverage**

**11** The estimates in this publication relate to persons covered by the survey scope. In the LFS, coverage rules are applied which aim to ensure that each person is associated with only one dwelling and hence has only one chance of selection in the survey. See Labour Force, Australia (cat. no. 6202.0) for more details.

## **SAMPLE SIZE**

**12** Approximately 92% of the selected households were fully responding to the SEW, which resulted in around 40,100 completed interviews.

## **DATA COLLECTION**

**13** Information was collected from respondents over a two week period in May 2016. The data were collected through interviews, conducted either face-to-face or over the telephone, or respondents were able to provide their information over the internet via a self-completed form.

**14** The May 2013 SEW was the first supplementary survey to incorporate this online data collection method, where the option was offered to just over one-quarter of the SEW sample. The May 2014 SEW is the first time this option was offered to all respondents. In 2016, 25% of the total SEW sample took up the online option.

**15** All information, either from interview or online self-completion, was obtained from any responsible adult in the household who was asked to respond on behalf of all persons in the household in scope of the survey.

## **ESTIMATION METHOD**

### **Weighting**

**16** Weighting is the process of adjusting results from a sample survey to infer results for the total population. To do this, a 'weight' is allocated to each enumerated person. The weight is a value which indicates how many persons in the population are represented by the sample person.

**17** The first step in calculating weights for each unit is to assign an initial weight, which is the inverse of the probability of the unit being selected in the survey. For example, if the probability of a person being selected in the survey was 1 in 300, then the person would have an initial weight of 300 (that is, they represent 300 people).

### **Population benchmarks**

**18** The initial weights are then calibrated to align with independent estimates of the population, referred to as benchmarks. The population included in the benchmarks is the survey scope. This calibration process ensures that the weighted data conform to the independently estimated distribution of the population described by the benchmarks rather than to the distribution within the sample itself. Calibration to population benchmarks helps to compensate for over or under-enumeration of particular categories of persons which may occur due to either the random nature of sampling or non-response.

**19** The survey was benchmarked to the estimated resident population (ERP) aged 15-74 years living in private dwellings and non-institutionalised special dwellings in each state and territory. People living in Indigenous communities were excluded.

## **Estimation**

**20** Survey estimates of counts of persons are obtained by summing the weights of persons with the characteristics of interest.

**21** To minimise the risk of identifying individuals in aggregate statistics, a technique is used to randomly adjust cell values. This technique is called perturbation. Perturbation involves small random adjustment of the statistics and is considered the most satisfactory technique for avoiding the release of identifiable statistics while maximising the range of information that can be released. These adjustments have a negligible impact on the underlying pattern of the statistics. After perturbation, a given published cell value will be consistent across all tables. However, adding up cell values to derive a total will not necessarily give the same result as published totals. The introduction of perturbation in publications ensures that these statistics are consistent with statistics released via services such as Table Builder.

## **RELIABILITY OF THE ESTIMATES**

**22** All sample surveys are subject to error which can be broadly categorised as either: sampling error or non-sampling error. For more information refer to the Technical Note.

### **Seasonal factors**

**23** The estimates are based on information collected in the survey month, and due to seasonal factors they may not be representative of other months of the year.

## **DATA QUALITY**

### **Interpretation of results**

**24** The method of obtaining information about all the persons in the household from any responsible adult is only used for collecting information on topics where other members of the household are likely to be able to answer the questions. If the responsible adult is unable to supply all of the details for another individual in the household, a personal interview is conducted with that particular individual.

## **DATA COMPARABILITY**

### **Comparability of time series**

**25** Supplementary surveys are not always conducted on the full LFS sample. Since August 1994 the sample for supplementary surveys has been restricted to no more than seven-eighths of the LFS sample. Since it was introduced, this survey has been conducted on various proportional samples and therefore sampling errors associated with previous supplementary surveys may vary from the sampling error for this survey.

**26** Since 2005, boarding school pupils have been excluded from the scope of the SEW, but were included in earlier collections. For more details, see the Scope section of these Explanatory Notes.

**27** Since 2007, industry data in the SEW have been classified according to the Australian and New Zealand Standard Industrial Classification, 2006 (cat. no. 1292.0) and prior to this, were classified according to the Australian and New Zealand Standard Industrial Classification, 1993 (cat. no. 1292.0). Therefore, industry data from SEW prior to 2007 are not directly comparable to data for 2007 and subsequent years.

**28** Since 2007, occupation data in the SEW have been classified according to the Australian and New Zealand Standard Classifications of Occupations, First Edition, Revision 1 (cat. no. 1220.0) and prior to this, were classified according to the Australia Standard Classifications of Occupations, Second Edition, 1997 (cat. no. 1220.0). Occupation data are not directly comparable between these two editions of the classification. Therefore, occupation data from SEW prior to 2007 are not directly comparable to 2007 and subsequent years.

**29** Prior to 2008, only persons aged 15-54 years were included in the apprenticeship/traineeship survey questions. In 2008, the age scope was extended to include persons aged 55-64 years and in 2009, the scope was further extended to include persons aged 65-74 years for these questions. In 2008, the definition for apprentices and trainees changed from those employed as apprentices/trainees to include only those with a formal contract under the **Australian Apprenticeships** scheme. Therefore data on apprentices from previous years are not directly comparable to 2008 and subsequent data.

**30** Revisions were made to the in-scope population in 2013. All respondents aged 65-74 years were included for the first time, rather than just those in the labour force or marginally attached to the labour force. Persons who

were permanently unable to work were also included.

**31** Revisions are made to population benchmarks for the LFS after each five-yearly Census of Population and Housing. The last such revision was made in January 2014 to take account of the results of the 2011 **Census of Population and Housing**. Estimates from supplementary surveys conducted from and including 2014 are therefore based on these 2011 population benchmarks.

**32** Since 2014, persons who are identified in the Labour Force Survey as currently studying a school level qualification were asked in SEW whether they are currently studying for any non-school qualifications. If the respondent was still attending school, their level of study was recorded as their current year of schooling, not their non-school qualification.

**33** After each Census, population estimates are normally revised back five years to the previous Census year. As announced in the June 2012 issue of Australian Demographic Statistics (cat. no. 3101.0), intercensal error between the 2006 and 2011 Censuses was larger than normal due to improved methodologies used in the 2011 Census Post Enumeration Survey. The intercensal error analysis indicated that previous population estimates for the base Census years were over-counted. An indicative estimate of the size of the over-count is that there should have been 240,000 fewer people at June 2006, 130,000 fewer in 2001 and 70,000 fewer in 1996. As a result, Estimated Resident Population estimates have been revised for the last 20 years rather than the usual five. Consequently, estimates of particular populations derived since SEW 2014 may be lower than those published for previous years as the SEW estimates have not been revised. Therefore, comparisons of SEW estimates since 2014 with previous years should not be made. However, for comparable data items, comparison of rates or proportions between years is appropriate.

### **Comparability with other ABS surveys**

**34** Since the SEW is conducted as a supplement to the LFS, data items collected in the LFS are also available in SEW. However, there are some important differences between the two surveys. The SEW sample is a subset of the LFS sample (see the Introduction of these Explanatory Notes) and has a response rate which is slightly lower than the LFS response rate for the same period. Also, the scope of the SEW differs slightly to the scope of the LFS (refer to the Scope section above). Due to these differences between the samples, the SEW data are weighted as a separate process to the weighting of LFS data.

**35** Differences may therefore be found in the estimates collected in the LFS and published as part of the SEW, when compared with estimates published in the May 2016 issue of Labour Force, Australia (cat. no. 6202.0). From September 2016, the ABS has published education data from the LFS as part of the Labour Force publication Labour Force, Australia, Detailed, Quarterly (cat. no. 6291.0.55.003). For more information on the differences between SEW and LFS in relation to education data items see the Fact Sheet: Expanded education data from the Labour Force Survey (in cat. no. 6291.0.55.003).

**36** Additionally, estimates from the SEW may differ from the estimates produced from other ABS collections, for several reasons. The SEW is a sample survey and its results are subject to sampling error. Results may differ from other sample surveys, which are also subject to sampling error. Users should take account of the relative standard errors (RSEs) on estimates and those of other survey estimates where comparisons are made.

**37** Differences may also exist in the scope and/or coverage of the SEW compared to other surveys. Differences in estimates, when compared to the estimates of other surveys, may result from different reference periods reflecting seasonal variations, non-seasonal events that may have impacted on one period but not another, or because of underlying trends in the phenomena being measured.

**38** Finally, differences can occur as a result of using different collection methodologies. This is often evident in comparisons of similar data items reported from different ABS collections where, after taking account of definition and scope differences and sampling error, residual differences remain. These differences are often the result of the mode of the collections, such as whether data are collected by an interviewer or self-enumerated by the respondent and whether the data are collected from the person themselves or from a proxy respondent. Differences may also result from the context in which questions are asked, i.e. where in the interview the questions are asked and the nature of preceding questions. The impacts on data of different collection methodologies are difficult to quantify. As a result, every effort is made to minimise such differences.

## **CLASSIFICATIONS**

### **Education**

**39** Education data are coded to the Australian Standard Classification of Education, 2001 (cat. no. 1272.0). The ASCED is a national standard classification which can be applied to all sectors of the Australian education system including schools, vocational education and training and higher education. The ASCED comprises two classifications: Level of Education and Field of Education.

**40** Level of Education is defined as a function of the quality and quantity of learning involved in an educational activity. There are nine broad levels, 15 narrow levels and 64 detailed levels. For definitions of these levels see the Australian Standard Classification of Education, 2001 (cat. no. 1272.0).

**41** Field of Education is defined as the subject matter of an educational activity. Fields of education are related to each other through the similarity of subject matter, through the broad purpose for which the education is undertaken, and through the theoretical content which underpins the subject matter. There are 12 broad fields, 71 narrow fields and 356 detailed fields. For definitions of these fields see the Australian Standard Classification of Education, 2001 (cat. no. 1272.0).

### Level of highest educational attainment

**42** Level of highest educational attainment was derived from information on highest year of school completed and level of highest non-school qualification. The derivation process determines which of the 'non-school' or 'school' attainments will be regarded as the highest. Usually the higher ranking attainment is self-evident, but in some cases some secondary education is regarded, for the purposes of obtaining a single measure, as higher than some certificate level attainments.

**43** The following decision table is used to determine which of the responses to questions on highest year of school completed (coded to ASCED Broad Level 6) and level of highest non-school qualification (coded to ASCED Broad Level 5) is regarded as the highest. This table has been modified since SEW 2013. It is emphasised that this table was designed for the purpose of obtaining a single value for level of highest educational attainment and is not intended to convey any other ordinality.

**Decision Table: Level of Highest Educational Attainment**

Highest year of school completed	Level of highest non-school qualification								
	Inadequately described / L.n.d.	Cert n.f.d.	Cert III & IV n.f.d.	Cert IV	Cert III	Cert I & II n.f.d.	Cert II	Cert I	N.S.
Sec. Education n.f.d	L.n.d.	L.n.d.	Cert III & IV n.f.d.	Cert IV	Cert III	L.n.d.	L.n.d.	L.n.d.	N.S.
Senior Sec. Education n.f.d Year 12	L.n.d.	L.n.d.	Cert III & IV n.f.d.	Cert IV	Cert III	Senior Sec. n.f.d.	Senior Sec. n.f.d.	Senior Sec. n.f.d.	N.S.
	L.n.d.	L.n.d.	Cert III & IV n.f.d.	Cert IV	Cert III	Year 12	Year 12	Year 12	N.S.
Year 11	L.n.d.	L.n.d.	Cert III & IV n.f.d.	Cert IV	Cert III	Year 11	Year 11	Year 11	N.S.
Junior Sec. Education n.f.d Year 10	L.n.d.	L.n.d.	Cert III & IV n.f.d.	Cert IV	Cert III	L.n.d.	L.n.d.	L.n.d.	N.S.
	L.n.d.	L.n.d.	Cert III & IV n.f.d.	Cert IV	Cert III	Year 10	Year 10	Year 10	N.S.
Year 9 and below	L.n.d.	Cert n.f.d.	Cert III & IV n.f.d.	Cert IV	Cert III	Cert I & II n.f.d.	Cert II	Cert I	N.S.
Never attended school	L.n.d.	Cert n.f.d.	Cert III & IV n.f.d.	Cert IV	Cert III	Cert I & II n.f.d.	Cert II	Cert I	N.S.
N.S.	N.S.	N.S.	Cert III & IV n.f.d.	Cert IV	Cert III	N.S.	N.S.	N.S.	N.S.

Cert = Certificate

L.n.d. = Level not determined

n.f.d. = not further defined

N.S. = Not Stated

Sec. = Secondary

**44** The decision table is also used to rank the information provided in a survey about the qualifications and attainments of a single individual. It does not represent any basis for comparison between differing qualifications. For example, a person whose highest year of school completed was Year 12, and whose level of highest non-school qualification was a Certificate III, would have those responses crosschecked on the decision table and would as a result have their level of highest educational attainment output as Certificate III. However, if the same person answered 'certificate' to the highest non-school qualification question, without any further detail, it would be crosschecked against Year 12 on the decision table as Level not determined. The decision table, therefore, does not necessarily imply that one qualification is 'higher' than the other. Education Variables, June 2014 (cat. no. 1246.0)

### Level of education of current study

**45** Since 2014, persons who are identified in the Labour Force Survey as currently studying a school level

qualification were asked in SEW whether they are currently studying for any non-school qualifications. If the respondent was still attending school, their level of study was recorded as their current year of schooling, not their non-school qualification.

## PRODUCTS AND SERVICES

**46** A number of data cubes (spreadsheets) containing all tables produced for this publication are available from the Downloads tab of the publication. The data cubes present tables of estimates and proportions, and their corresponding Relative Standard Errors (RSEs). For all but the first data cube (Tables 1-21: Education and Work), Margins of Error (MOE) are also included.

**47** For users who wish to undertake more detailed analysis of the data, the survey microdata will be released through the TableBuilder product. For more details, refer to the TableBuilder information, Microdata: Education and Work, Australia (cat. no. 6227.0.30.001).

**48** A Confidentialised Unit Record File (CURF) was released biennially from 2001 to 2011. A CURF will not be produced for the SEW 2016 data.

**49** Special tabulations are available on request. Subject to confidentiality and sampling variability constraints, tabulations can be produced from the survey incorporating data items, populations and geographic areas selected to meet individual requirements. These can be provided in printed or electronic form. All enquiries should be made to the National Information and Referral Service on 1300 135 070.

## ACKNOWLEDGMENTS

**50** ABS publications draw extensively on information provided freely by individuals, businesses, governments and other organisations. Their continued cooperation is very much appreciated; without it, the wide range of statistics published by the ABS would not be available. Information received by the ABS is treated in strict confidence as required by the **Census and Statistics Act 1905**.

## PREVIOUS SURVEYS

**51** Results of similar surveys have been published in previous issues. These surveys were conducted annually from February 1964 to February 1974, in May 1975 and 1976, in August 1977 and 1978, and annually in May since 1979. Results of previous surveys were published in *Transition from Education to Work, Australia* (cat. no. 6227.0) from 1964 to 2000. Since May 2001, the results of the survey have been published in *Education and Work, Australia* (cat. no. 6227.0).

## CHANGES THIS ISSUE

**52** The data cube table titles and order have changed since the 2015 publication. The content of the tables remains unchanged. A concordance is provided in the spreadsheet "Table title concordance SEW 2016 to 2015" located under the Downloads Tab.

## NEXT SURVEY

**53** The ABS intends to conduct this survey again in May 2017.

## RELATED PUBLICATIONS

**54** Refer to the Related Information tab for other ABS publications which may be of interest.

**55** Current publications and other products released by the ABS are available from the ABS website. The ABS also issues a daily upcoming release advice on the website that details products to be released in the week ahead.

## Glossary

### GLOSSARY

## **Apprentice**

An apprentice is a person who has entered into a legal contract (called a training agreement or contract of training) with an employer, to serve a period of training for the purpose of attaining tradesperson status in a recognised trade. In this survey, persons who are apprentices and trainees are identified by their answer to a question specifically pertaining to a contract under the Australian Apprenticeships scheme.

## **Balance of state/territory**

Comprises the balance of each state/territory not included in Capital City. See Australian Statistical Geography Standard (ASGS): Volume 1 - Main Structure and Greater Capital City Statistical Areas, July 2011 (cat. no. 1270.0.55.001).

## **Capital city**

Refers to Greater Capital City Statistical Areas (GCCSA) as defined by the ASGS. The GCCSAs represent the socio-economic extent of each of the eight State and Territory capital cities. The whole of the ACT is included in the GCCSA.

## **Certificate n.f.d. (Certificate not further defined)**

Survey responses are coded to Certificate not further defined (n.f.d.) when there is not enough information to code them to Certificate I, II, III or IV in the Australian Standard Classification of Education (ASCED), 2001 (cat. no. 1272.0), Level of education classification.

## **Completed**

'Completed' a qualification means having successfully passed all of the requirements for the qualification.

## **Country of birth**

Country of birth has been classified according to the Standard Australian Classification of Countries (SACC), Second Edition (cat. no. 1269.0).

## **Currently enrolled in study**

Enrolled in a course of formal study for a trade certificate, diploma, degree or any other educational qualification, in May of the survey year.

## **Dependent child**

Persons aged less than 15 years who have a parent/guardian in the household.

## **Educational institution**

Any institution whose primary role is education. Included are schools, higher education establishments, colleges of technical and further education and public and private colleges.

## **Employed**

Persons who, during the reference week:

- worked for one hour or more for pay, profit, commission or payment in kind in a job or business, or on a farm (comprising employees, employers and own account workers); or
- worked for one hour or more without pay in a family business or on a farm (i.e. contributing family workers); or
- were employees who had a job but were not at work and were:
  - away from work for less than four weeks up to the end of the reference week; or
  - away from work for more than four weeks up to the end of the reference week and received pay for some or all of the four week period to the end of the reference week; or
  - away from work as a standard work or shift arrangement; or
  - on strike or locked out; or
  - on workers' compensation and expected to return to their job; or
- were employers or own account workers who had a job, business or farm, but were not at work.

## **Employed full-time**

Employed persons who usually worked 35 hours or more a week (in all jobs) and those who, although usually working less than 35 hours a week, worked 35 hours or more during the reference week.

### **Employed part-time**

Employed persons who usually worked less than 35 hours a week (in all jobs) and either did so during the reference week, or were not at work in the reference week.

### **Enrolled**

Refers to persons registered for a course of formal study in the particular reference period (e.g. survey month, or previous calendar year).

### **Field not determined**

Field not determined includes inadequately described responses or where no responses were given.

### **Field of trade**

Refers to the occupation of an apprentice or trainee and is classified according to the Australian and New Zealand Standard Classification of Occupations (ANZSCO), First Edition, Revision 1 (cat. no. 1220.0) Unit Group.

### **Formal study**

Any study being undertaken that will lead to a recognised qualification, issued by a relevant approved body, in recognition that a person has achieved learning outcomes or competencies relevant to identified individual, professional, industry or community needs. This includes study for a school qualification. In this survey, if the respondent was still attending school their level of study was recorded as their current year of schooling. If the respondent had left school and was enrolled in formal study they were asked the level of the qualification.

### **Higher education institution or organisation**

An Australian institution providing higher education courses, e.g. universities; colleges of advanced education; institutes of advanced education; institutes of higher education; institutes of tertiary education; agricultural colleges; and some institutes of technology, and the equivalent institutions overseas.

### **Industry**

Industry data is classified according to the Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 (cat. no. 1292.0).

### **Level of highest educational attainment**

Level of highest educational attainment identifies the highest achievement a person has attained in any area of formal study. It is not a measurement of the relative importance of different fields of study, but a ranking of qualifications and other educational attainments regardless of the particular area of study or the type of institution in which the study was undertaken. For more information regarding how Level of highest educational attainment is derived see Decision Table: Level of highest educational attainment. It is categorised according to the Australian Standard Classification of Education (ASCED), 2001 (cat. no. 1272.0) Level of education classification.

### **Level of highest educational attainment (non-school priority)**

A person's level of highest educational attainment (non-school priority) is their highest non-school qualification where they have completed one. For persons who have not completed a non-school qualification their level of highest educational attainment (non-school priority) is the highest year of school they have completed. It is categorised according to the Australian Standard Classification of Education (ASCED), 2001 (cat. no. 1272.0) Level of education classification.

### **Level of highest non-school qualification**

A person's level of highest non-school qualification is the highest qualification a person has attained in any area of formal study other than school study. It is categorised according to the Australian Standard Classification of Education (ASCED), 2001 (cat. no. 1272.0) Level of education classification.

### **Level not determined**

Level not determined includes inadequately described responses or where no responses were given.

## **Main field of education**

The main subject matter of the study undertaken by a person in completing an educational activity. It is categorised according to the Australian Standard Classification of Education (ASCED), 2001 (cat. no. 1272.0) Field of education classification.

## **Non-school qualification**

Non-school qualifications are awarded for educational attainments other than those of pre-primary, primary or secondary education. They include qualifications at the Postgraduate Degree level, Master Degree level, Graduate Diploma and Graduate Certificate level, Bachelor Degree level, Advanced Diploma and Diploma level, and Certificates I, II, III and IV levels. Non-school qualifications may be attained concurrently with school qualifications.

## **Not in labour force**

Persons who were not in the categories 'employed' or 'unemployed'.

## **Occupation**

Occupation data is classified according to the ANZSCO - Australian and New Zealand Standard Classification of Occupations, First Edition, Revision 1 (cat. no. 1220.0).

## **Qualification**

Formal certification, issued by a relevant approved body, in recognition that a person has achieved an appropriate level of learning outcomes or competencies relevant to identified individual, professional, industry or community needs. Statements of attainment awarded for partial completion of a course of study at a particular level are excluded.

## **Remoteness**

The Australian Statistical Geography Standard (ASGS) was used to define remoteness. The Remoteness Structure is described in detail in the publication Australian Statistical Geography Standard (ASGS): Volume 5 - Remoteness Structure, July 2011 (cat. no. 1270.0.55.005).

## **Reference week**

The week preceding the week in which the interview was conducted.

## **School-based apprenticeship or traineeship**

School-based apprenticeships or traineeships are undertaken part-time while at school and combine paid employment as an apprentice or trainee, vocational training and senior secondary school studies. This is a different population to those people who are undertaking apprenticeships or traineeships through the Australian Apprenticeships scheme which are considered separately.

## **School study**

School study is participation in primary or secondary level education, regardless of the institution or location where the study is or was undertaken. It therefore includes such study undertaken in a Technical and Further Education (TAFE) or other institution.

## **School leavers**

Persons aged 15-24 years who attended school in the previous year, but were not attending school in May of the survey year. Note that these persons may be studying a school year level at a non-school institution (e.g. studying Year 12 at TAFE).

## **Socio-Economic Status (SEIFA-IRSD)**

This is one of four Socio-Economic Indexes for Areas (SEIFAs) compiled by the ABS following each Census of Population and Housing, from various characteristics of persons resident in particular areas. The Index of Relative Socio-Economic Disadvantage summarises attributes such as income, educational attainment, unemployment and occupation skill levels. The index refers to the area (the Statistical Area Level 1) in which a person lives, not to the socio-economic situation of the particular individual. The index ranks areas on a continuum from most disadvantaged to least disadvantaged. A low score on the index (i.e. lowest quintile or decile) indicates a high proportion of relatively disadvantaged people in an area. Such areas include many households with low income, people with no qualifications and many people in low skill occupations. It should be noted that it cannot be concluded that an area with a very high score has a large proportion of relatively advantaged ('well off') people, as

there are no variables in the index to indicate this. It can only be concluded that such an area has a relatively low incidence of disadvantage. The indexes used in this publication were those compiled following the 2011 Census. For further information about the indexes, see *Census of Population and Housing: Socio-Economic Indexes for Areas (SEIFA), Australia, 2011* (cat. no. 2033.0.55.001).

### **Student visa status**

Whether the respondent holds a Student visa or Other type of visa at the time of interview, that allowed them to stay in Australia. Categories for Student visa status are:

- Student visa - Holders of these visas are people who have come to Australia for a specified period to study at an Australian educational institution. Student visas are a type of Temporary visa.
- Other - Includes holders of Permanent, Temporary (excluding student visas) and Provisional visas.
- Unknown - where the respondent has been unable to articulate the type of visa held.

### **TAFE**

A Technical and Further Education institution. In Victoria this may also be interpreted as Training and Further Education.

### **Trainee**

A trainee is a person who has entered into a legal contract (called a training agreement or contract of training) with an employer, to serve a period of training in a vocational area (e.g. office administration, information technology, hospitality). In this survey, persons who are apprentices and trainees are identified by their answer to a question specifically pertaining to a contract under the Australian Apprenticeships scheme.

### **Unemployed**

Persons who were not employed during the reference week, and:

- had actively looked for full-time or part-time work at any time in the four weeks up to the end of the reference week and were available for work in the reference week; or
- were waiting to start a new job within four weeks from the end of the reference week and could have started in the reference week if the job had been available then.

### **Vocational Education and Training (VET)**

VET relates to education and training that aims to equip people with knowledge, skills and/or competences required in particular occupations or, more broadly, on the labour market. VET is a component of apprenticeships or traineeships, including those that are school-based. However, VET can be undertaken without also undertaking an apprenticeship or traineeship.

## **Abbreviations**

### **ABBREVIATIONS**

ABS	Australian Bureau of Statistics
ABSCQ	Australian Bureau of Statistics Classification of Qualifications
ANZSCO	Australian and New Zealand Standard Classification of Occupations
ANZSIC	Australian and New Zealand Standard Industrial Classification
ASCED	Australian Standard Classification of Education
CURF	confidentialised unit record file
IRSD	Index of relative socio-economic disadvantage
ISCED	International Standard Classification of Education
ISCO	International Standard Classification of Occupations
ISIC	International Standard Industrial Classification of All Economic Activities
LFS	Labour Force Survey
MOE	Margin of Error
n.f.d.	not further defined
RSE	relative standard error
SACC	Standard Australian Classification of Countries
SE	standard error
SEIFA	Socio-Economic Indexes for Areas

SEW	Survey of Education and Work
TAFE	Technical and Further Education
VET	Vocational Education and Training

## Quality Declaration - Summary

### QUALITY DECLARATION - SUMMARY

#### INSTITUTIONAL ENVIRONMENT

The Survey of Education and Work (SEW) is conducted in May each year throughout Australia as part of the Australian Bureau of Statistics (ABS) household survey program. For information on the institutional environment of the ABS, including its legislative obligations, financing and governance arrangements, and mechanisms for scrutiny of ABS operations, please see ABS Institutional Environment.

TableBuilder files are released in accordance with the conditions specified in the Statistics Determination section of the Census and Statistics Act 1905 (CSA). This ensures that confidentiality is maintained whilst enabling micro level data to be released. More information on the confidentiality practices associated with TableBuilder can be found at the Survey Confidentiality Page.

#### RELEVANCE

The SEW provides information for a range of key indicators relating to the educational participation and attainment of persons aged 15 to 74 years, along with data on their transition between education and work.

The type of information collected includes: general demographic and labour force characteristics; participation in education in the survey month and in the year prior to the survey; type of educational institution attended; level of education of current and previous study; level and main field of highest non-school qualification; transition from education to work; unmet demand for education; and selected characteristics of apprentices, including unmet demand for apprenticeships and traineeships.

The Australian Standard Classification of Education (ASCED) (cat. no. 1272.0) is used to classify the Level and Field of education. The ASCED is a national standard classification which can be applied to all sectors of the Australian education system including schools, vocational education and training and higher education.

As SEW is collected as a supplement to the Labour Force Survey (LFS), persons excluded from the LFS are also excluded from this survey (see Explanatory Notes in Labour Force, Australia (cat. no. 6202.0) for standard LFS exclusions). Additional exclusions from SEW are persons aged 75 years or older, institutionalised persons, boarding school pupils and persons in Indigenous Communities. Persons permanently unable to work and persons aged 65 to 74 years who are not intending to work, or not in the labour force, or not marginally attached to the labour force, were included for the first time in 2013.

#### TIMELINESS

The ABS has been conducting similar education and work surveys since 1964. These surveys were conducted annually, in February, from 1964 to 1974, in May 1975 and 1976, in August 1977 and 1978 and annually, in May, since 1979. Data from the survey are released approximately six months after they have been collected.

#### ACCURACY

The LFS is primarily designed to provide estimates for the whole of Australia and, secondly, for each state and territory. The LFS is based on a sample of private dwellings and non-private dwellings, such as hotels and motels. The number of completed interviews for the 2016 Survey of Education and Work (after taking into account scope and coverage exclusions) was 40,100. The sample size was achieved by obtaining a response rate of 92%.

Two types of error are possible in an estimate based on a sample survey: non-sampling error and sampling error.

Non-sampling error arises from inaccuracies in collecting, recording and processing the data. Every effort is made to minimise reporting error by the careful design of questionnaires, intensive training and supervision of interviewers, and efficient data processing procedures.

Sampling error occurs because a sample, rather than the entire population, is surveyed. One measure of the likely difference resulting from not including all dwellings in the survey is given by the standard error. There are about two chances in three that a sample estimate will differ by less than one standard error from the figure that would have been obtained if all dwellings had been included in the survey and about 19 chances in 20 that the difference will be less than two standard errors. Relative standard errors (RSEs) of the estimates for this survey are included with this release.

Another measure is the Margin of Error (MOE), which describes the distance from the population value of the estimate at a given confidence level, and is specified at a given level of confidence. Confidence levels typically used are 90%, 95% and 99%. For example, at the 95% confidence level the MOE indicates that there are about 19 chances in 20 that the estimate will differ by less than the specified MOE from the population value (the figure obtained if all dwellings had been enumerated). The MOEs in this publication are calculated at the 95% confidence level.

## COHERENCE

The ABS seeks to maximise consistency and comparability over time by minimising changes to its surveys. However, sound survey practice requires ongoing development and maintenance to maintain the integrity of the data and the efficiency of collection.

After each Census, population estimates are normally revised back five years to the previous Census year. As announced in the June 2012 issue of Australian Demographic Statistics (cat. no. 3101.0), intercensal error between the 2006 and 2011 Censuses was larger than normal due to improved methodologies used in the 2011 Census Post Enumeration Survey. The intercensal error analysis indicated that previous population estimates for the base Census years were over-counted. An indicative estimate of the size of the over-count is that there should have been 240,000 fewer people at June 2006, 130,000 fewer in 2001 and 70,000 fewer in 1996. As a result, Estimated Resident Population estimates have been revised for the last 20 years rather than the usual five.

Consequently, estimates of particular populations derived since SEW 2014 may be lower than those published for previous years as the SEW estimates have not been revised. Therefore, comparisons of SEW estimates since 2014 with previous years should not be made. However, for comparable data items, comparison of rates or proportions between years is appropriate.

The May 2013 SEW was the first supplementary survey to incorporate an online data collection method, where the option was offered to just over one-quarter of the SEW sample. Since the May 2014 SEW this option has been offered to all respondents. For more information see the article Transition to Online Collection of the Labour Force Survey.

For changes between iterations of the SEW, please refer to the Explanatory Notes. For a full list of changes made to the LFS, see Chapter 20 of Labour Statistics: Concepts, Sources and Methods, 2013 (cat. no. 6102.0.55.001) and Information Paper: Forthcoming Changes to Labour Force Statistics, Aug 2015 (cat. no. 6292.0).

## INTERPRETABILITY

Detailed information on the terminology, classifications and other technical aspects associated with the SEW can be found in the relevant web pages included with this release.

## ACCESSIBILITY

Tabulated data and associated RSEs are available in spreadsheet format and can be accessed from the Downloads tab.

Data from this survey will also be accessible in the TableBuilder environment, enabling users to create their own customised output as required. For further details, refer to the Microdata Entry Page on the ABS website.

A Confidentialised Unit Record File (CURF) containing confidentialised microdata from the SEW has been released biennially from 2001 to 2011.

Data are also available on request. Note that detailed data can be subject to high RSEs which in some cases may result in data being confidentialised.

For further information about these or related statistics, contact the National Information and Referral Service on 1300 135 070, or email [client.services@abs.gov.au](mailto:client.services@abs.gov.au).

The ABS Privacy Policy outlines how the ABS will handle any personal information that you provide to us.

# Data quality (Technical Note)

## TECHNICAL NOTE

### Reliability of the Estimates

**1** The estimates in this publication are based on information obtained from a sample survey. Any data collection may encounter factors, known as non-sampling error, which can impact on the reliability of the resulting statistics. In addition, the reliability of estimates based on sample surveys are also subject to sampling variability. That is, the estimates may differ from those that would have been produced had all persons in the population been included in the survey.

#### Non-sampling error

**2** Non-sampling error may occur in any collection, whether it is based on a sample or a full count such as a census. Sources of non-sampling error include non-response, errors in reporting by respondents or recording of answers by interviewers and errors in coding and processing data. Every effort is made to reduce non-sampling error by careful design and testing of questionnaires, training and supervision of interviewers, and extensive editing and quality control procedures at all stages of data processing.

#### Sampling error

**3** Sampling error is the difference between the published estimates, derived from a sample of persons, and the value that would have been produced if the total population (as defined by the scope of the survey) had been included in the survey. One measure of the sampling error is given by the standard error (SE), which indicates the extent to which an estimate might have varied by chance because only a sample of persons was included. There are about two chances in three (67%) that a sample estimate will differ by less than one SE from the number that would have been obtained if all persons had been surveyed, and about 19 chances in 20 (95%) that the difference will be less than two SEs.

**4** Another measure of the likely difference is the relative standard error (RSE), which is obtained by expressing the SE as a percentage of the estimate.

$$RSE\% = \left( \frac{SE}{estimate} \right) \times 100$$

**5** RSEs for count estimates have been calculated using the Jackknife method of variance estimation. This involves the calculation of 30 'replicate' estimates based on 30 different subsamples of the obtained sample. The variability of estimates obtained from these subsamples is used to estimate the sample variability surrounding the count estimate.

**6** The Excel spreadsheets in the Downloads tab contain all the tables produced for this release and the calculated RSEs for each of the estimates.

**7** Only estimates (numbers or percentages) with RSEs less than 25% are considered sufficiently reliable for most analytical purposes. However, estimates with larger RSEs have been included. Estimates with an RSE in the range 25% to 50% should be used with caution while estimates with RSEs greater than 50% are considered too unreliable for general use. All cells in the Excel spreadsheets with RSEs greater than 25% contain a comment indicating the size of the RSE. These cells can be identified by a red indicator in the corner of the cell. The comment appears when the mouse pointer hovers over the cell.

**8** Another measure is the Margin of Error (MOE), which shows the largest possible difference that could be between the estimate due to sampling error and what would have been produced had all persons been included in the survey with a given level of confidence. It is useful for understanding and comparing the accuracy of proportion estimates.

**9** Where provided, MOEs for estimates are calculated at the 95% confidence level. At this level, there are 19 chances in 20 that the estimate will differ from the population value by less than the provided MOE. The 95% MOE is obtained by multiplying the SE by 1.96.

$$MOE = SE \times 1.96$$

## Calculation of Standard Error

**10** Standard errors can be calculated using the estimates (counts or percentages) and the corresponding RSEs. See What is a Standard Error and Relative Standard Error, Reliability of estimates for Labour Force data for more details.

## Proportions and Percentages

**11** Proportions and percentages formed from the ratio of two estimates are also subject to sampling errors. The size of the error depends on the accuracy of both the numerator and the denominator. A formula to approximate the RSE of a proportion is given below. This formula is only valid when x is a subset of y:

$$RSE\left(\frac{x}{y}\right) \approx \sqrt{[RSE(x)]^2 - [RSE(y)]^2}$$

## Differences

**12** The difference between two survey estimates (counts or percentages) can also be calculated from published estimates. Such an estimate is also subject to sampling error. The sampling error of the difference between two estimates depends on their SEs and the relationship (correlation) between them. An approximate SE of the difference between two estimates (x-y) may be calculated by the following formula:

$$SE(x - y) \approx \sqrt{[SE(x)]^2 + [SE(y)]^2}$$

**13** While this formula will only be exact for differences between separate and uncorrelated characteristics or sub populations, it provides a good approximation for the differences likely to be of interest in this publication.

## Significance Testing

**14** A statistical significance test for a comparison between estimates can be performed to determine whether it is likely that there is a difference between the corresponding population characteristics. The SE of the difference between two corresponding estimates (x and y) can be calculated using the formula shown above in the Differences section. This SE is then used to calculate the following test statistic:

$$\left(\frac{x - y}{SE(x - y)}\right)$$

**15** If the value of this test statistic is greater than 1.96 then there is evidence, with a 95% level of confidence, of a statistically significant difference in the two populations with respect to that characteristic. Otherwise, it cannot be stated with confidence that there is a real difference between the populations with respect to that characteristic.